

Synthesis and characterization of Co-doped molybdenum sulfide catalyst for electrochemical hydrogen evolution

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Transition metal dichalcogenides have been identified as excellent hydrogen evolution reaction (HER) catalyst for the water splitting reaction. Molybdenum sulfide catalysts have a potential to be a low cost and highly efficient HER catalysts. Here, we report cobalt-doped molybdenum sulfide catalysts on carbon fiber paper (CFP) via a facile hydrothermal method. The Co-doped molybdenum sulfide catalyst shows a dramatically higher catalytic activity than that of a non-doped molybdenum sulfide catalyst. Furthermore, Co-doped molybdenum sulfide exhibits excellent stability that cathodic current density slightly decreases after 1000 cycles of the HER experiment.